October 11, 2002

Dear Harold:

This is a continuation of the "informal" reply to your query on the interface of the DXP38 to the TS-570S.

Please refer to my rudimentary hand-drawn line drawing of the interconnections. The top three connections are all most people use to interface the DXP to a rig. Most everyone uses AFSK to key the rig for standard RTTY, but when you do this the rig must be in the LSB mode for 170Hz shift standard Baudot RTTY. The Clover-II mode of the DXP also requires the AFSK interface.

All you need to use the above interface is three (or four - if you want to use the FSK mode of your transceiver) RadioShack shielded phono cables – say 2 to 3 feet long – with one RCA connector on one end and un-terminated (or just loose ends) at the other end. At the un-terminated end you will have a center conductor and a shield. The shield is ground.

Thus, for the DXP PTT connection you would place the RCA plug of the shielded phono cable into the DXP's PTT jack, and connect the center conductor of the other end to Pin 9 of the Kenwood's ACC2 connector, and the shield to Pin 8 of the ACC2 connector.

For the DXP AF OUT connection you would place the RCA plug of the shielded phono cable into the DXP's AF OUT jack, and connect the center conductor of the other end to Pin 11 of the ACC2 connector, and the shield to Pin 12 of the ACC2 connector.

For the DXP AF IN connection you would place the RCA plug of the shielded phono cable into the DXP's AF IN jack, and connect the center conductor of the other end to Pin 3 of the ACC2 connector, and the shield to Pin 4 of the ACC2 connector.

If you want to use the FSK mode of the transceiver for RTTY only (this allows you to use the narrow filters), the connection below also must be made:

For the DXP FSK connection you would place the RCA plug of the shielded phono cable into the DXP's FSK jack, and connect the center conductor of the other end to Pin 2 of the ACC2 connector, and the shield to Pin 4 of the ACC2 connector.

I assume Kenwood supplies a mating connector for the ACC2 jack on the back of the transceiver. If not, you will have to acquire one.

If you have a problem with this information, we "could" build the cable for you. More specifically, that is, I could be the cable for you. We normally don't do this, however, we have made special exceptions to the rule. However, I would need to be sent the mating

ACC2 connector to be able to make up the cable for you. The cost of making up special cables is $50.00, plus shipping – not cheap I know.

However, if you wish, we can do this for you. Please let me know.

If you have internet e-mail, you can e-mail me at: dallen@halcomm.com

Otherwise, you may call me at (217) 367-7373.

Again, I apologize for the informality of the reply, but it was done for expedience purposes only. I wanted to get this into the mail to you today.

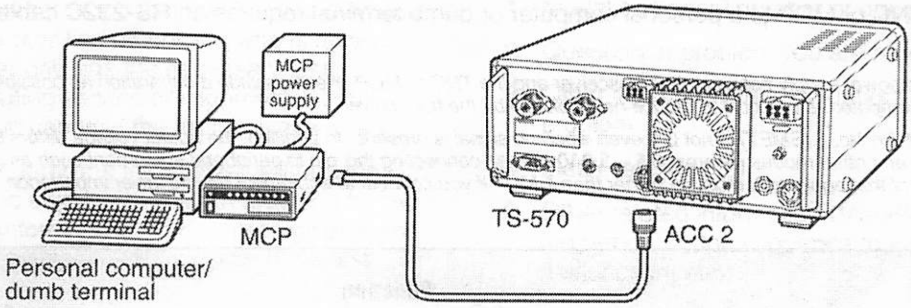
73,

Don Allen W9CW
HAL Communications Corp.

RTTY EQUIPMENT

Use the **ACC 2** connector to connect to the RTTY equipment. Connect the RTTY key output line to pin 2 of the **ACC 2** connector. Connect the demodulation input line of the RTTY equipment to pin 3 of the **ACC 2** connector.

Note: Do not share a single power supply between the transceiver and the RTTY equipment. Keep as wide a separation as possible between the transceiver and the RTTY equipment as practical to reduce noise-pickup by the transceiver.

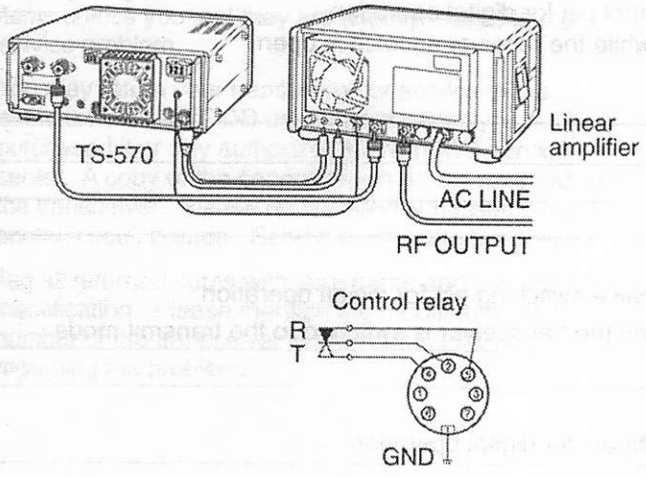


LINEAR AMPLIFIER

Connect an external transmit power amplifier to the **REMOTE** connector. Before using the external amplifier, switch ON the linear amplifier control relay via Menu No. 39.

The TX/RX relay response time is 10 ms when you have selected CW Full Break-in and 25 ms when you have selected CW Semi Break-in.

*Note: The TX/RX control method differs depending on external amplifier models. Some amplifiers enter the TX mode when the control terminal is grounded. For those amplifiers, connect pin 2 of the **REMOTE** connector to the GND terminal of the amplifier and connect pin 4 of the connector to the control terminal of the amplifier.*



REMOTE Connector
(Rear panel view)

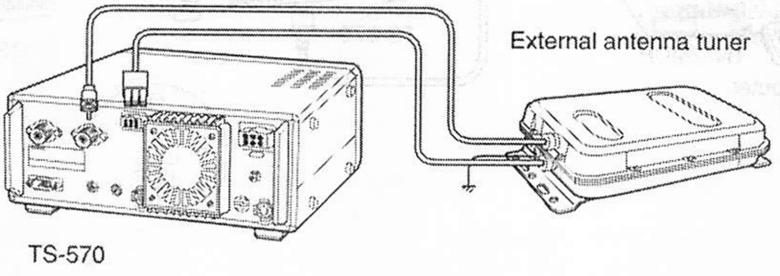
REMOTE connector

Pin No.	Function
1	Speaker output
2	Common terminal
3	Standby; when grounded, the transceiver enters TX mode.
4	When connected with the common terminal, the amplifier enters TX mode.
5	When connected with the common terminal, the amplifier enters RX mode.
6	ALC input from amplifier
7	Approx. +12 V DC is output when in TX mode (10 mA max.).

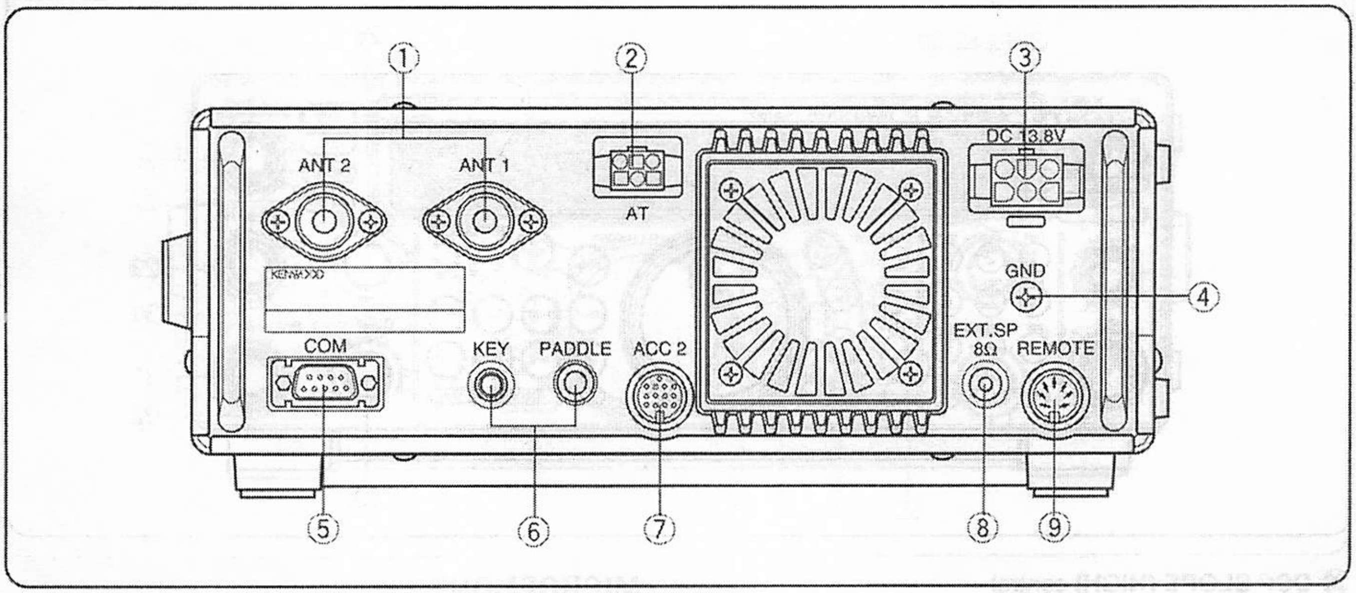
ANTENNA TUNER

Use the **ANT 1** connector and the **AT** connector to connect an external antenna tuner. If you connect the external tuner to the **ANT 2** connector, the external tuner will not function.

Note: While using an external antenna tuner with the TS-570S, you cannot use the 6 m band to transmit. Connect your 6 m band antenna to the ANT 2 connector.



REAR PANEL



① **ANT 1** and **ANT 2** connectors

Connect the feed lines from your antennas to these connectors. Refer to pages 1 and 48 for details.

② **AT** connector

Mates with the connector on the cable supplied with the external antenna tuner. Refer to the instruction manual supplied with this tuner for more information.

③ **DC 13.8 V** power input connector

Connect a 13.8 V DC power source {page 2}. Use the supplied cable with a regulated DC power supply.

④ **GND** post

Connect a heavy gauge wire or copper strap between the ground post and the nearest earth ground {page 2}.

⑤ **COM** connector

Mates with a 9-pin female RS-232C connector for connecting a computer via one of its serial communication ports {page 60}. Also used with the Quick Data Transfer function {page 60}.

⑥ **KEY** and **PADDLE** jacks

The PADDLE jack mates with a 6.0 mm (1/4") 3-conductor plug for connecting a keyer paddle to the internal electronic keyer. The KEY jack mates with a 3.5 mm (1/8") 2-conductor plug for connecting an external key for CW operation. Read "Keys and Keyboards for CW Operation" {page 3} before connecting to these jacks.

⑦ **ACC 2** connector

Mates with a 13-pin male DIN connector for connecting

⑧ **EXT SP** jack

Mates with a 3.5 mm (1/8"), 2-conductor (mono) plug for connecting an external speaker {page 3}. Connecting an external speaker cuts off the audio automatically to the internal speaker.

⑨ **REMOTE** connector

Mates with a 7-pin male DIN connector for connecting a linear amplifier {page 61}.

European versions only: *Before connecting to the* ***ACC 2*** *and* ***COM*** *connectors, remove the protective covers.*

MCP AND TNC

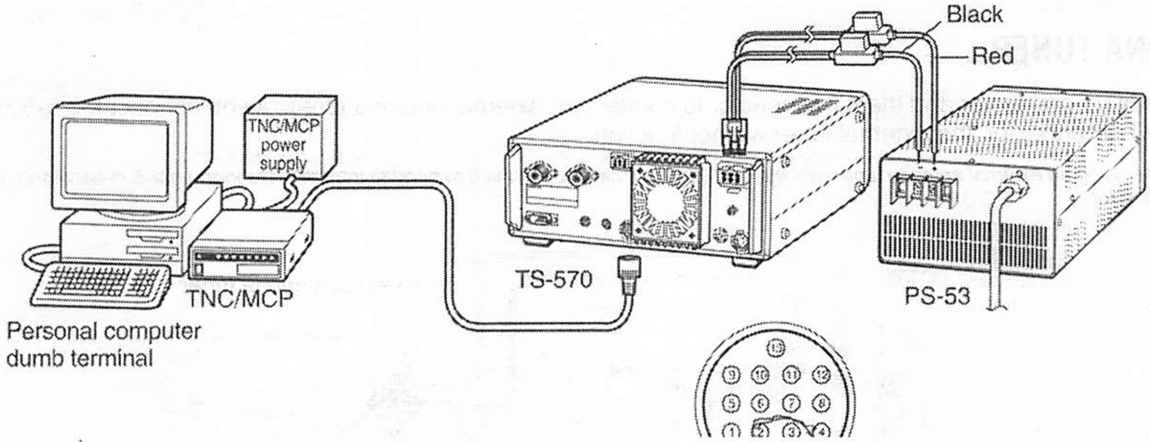
Use the **ACC 2** connector to connect the input/output lines from a Terminal Node Controller (TNC) for Packet operation, a Multimode Communications Processor (MCP) for operation on Packet, PacTOR, AMTOR, G-TOR™, or FAX, or from a Clover interface. Also use the **ACC 2** connector to connect SSTV and phone patch equipment.

- Connect the TNC or MCP to the **ACC 2** connector using a cable equipped with a 13-pin DIN plug.
- Connecting the TNC or MCP to a personal computer or dumb terminal requires an RS-232C cable.

Note:

- *Do not share a single power supply between the transceiver and the TNC or MCP. Keep as wide a separation as possible between the transceiver and the computer as practical to reduce noise-pickup by the transceiver.*
- *The output voltage of Pin No. 6 (SMET) is not 0 V even when no signal is present. In addition, the output voltage differs between FM (approx. 2.8 ~ 3.8 V) and other modes (approx. 0.5 ~ 3.8 V). When connecting this pin to peripheral equipment such as a personal computer, the input impedance of that equipment must be higher than 1 MΩ. If you connect to equipment having lower impedance, the S-meter will not give accurate readings.*

Pin No.	Pin Name	Function
1	NC	Not connected
2	RTK	RTTY key input
3	ANO	AF output from receiver • Connect to TNC or MCP receive data pin for digital operation. • AF output level is independent of **AF** control setting. • AF output level can be changed via Menu No. 34. • Output impedance: 4.7 kΩ
4	GND	Shield for pin 3
5	PSQ	Squelch control • Connect to TNC or MCP squelch control pin for digital operation. • Prevents the TNC from transmitting while the receiver squelch is open. • Squelch open: Low impedance • Squelch closed: High impedance
6	SMET	S-meter output
7	NC	Not connected
8	GND	Chassis ground
9	PKS	Transceiver PTT line control • Connect to TNC or MCP transmit/receive switching pin for digital operation. • Microphone audio input is muted when the transceiver is switched to the transmit mode.
10	NC	Not connected
11	PKD	Microphone audio input • Connect to TNC or MCP transmit data pin for digital operation.
12	GND	Shield for pin 11
13	SS	PTT control (in parallel with MIC jack) for connecting a footswitch or other external controller



2.2 DXP38 Rear Panel Connections

The rear panel of the DXP38 modem is shown in Figure 2.1 and the limits for each I/O signal are shown in Table 2.1. These requirements are compatible with all modern amateur transmitters and receivers. DO NOT EXCEED THESE LIMITATIONS.

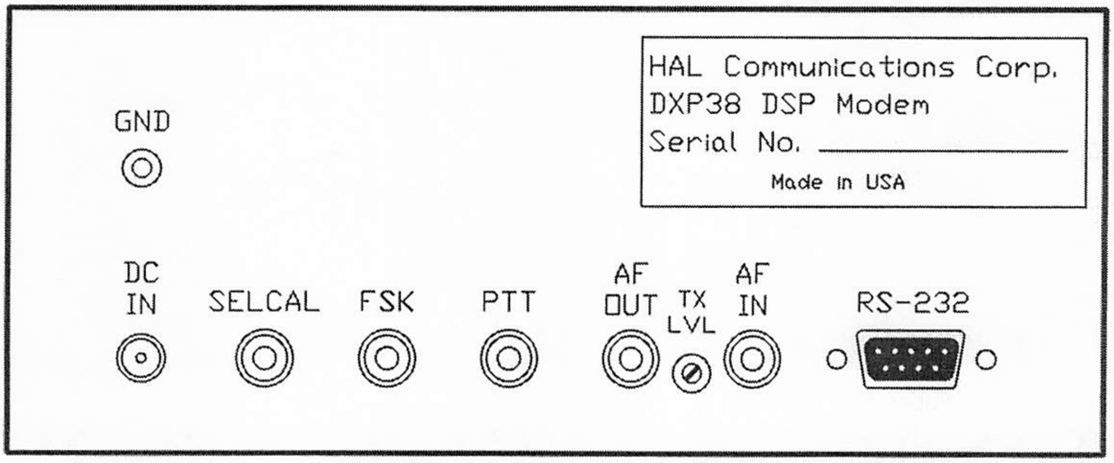


Figure 2.1 DXP38 Rear Panel Connections

Table 2.1
DXP38 I/O Connections

CONN	FUNCTION	I/O	LIMITS
AF IN	Audio from RX	Input	5V p-p
AF OUT	Audio to TX	Output	-30dBm (25 mV)
PTT	Push-to-Talk Output	Output	+50V @ 100 ma
FSK	FSK Output	Output	+50V @ 100 ma
SELCAL	SEL-CAL Output	Output	+50V @ 100 ma
DC IN	DC Power Input	Input	+9 - +18V @ 0.6A
GND	RF Ground	Ground	
RS-232	Data	I/O	+/-15 VDC

Typical connections of the DXP38 to radio station equipment are shown in Figure 2.2.

2.2.1 Audio Input

The DXP38 Audio Input (AF IN) is unbalanced. The Input impedance is 10,000 ohms, ±10%. This input can be directly connected to a wide variety of receiver audio output terminals including low-impedance speaker (4 - 16 ohms), line (600 ohms), headphone (2K ohms) or "recorder output" (10,000 ohms). A matched terminating resistor is not required. The maximum audio input voltage to the DXP38 should not exceed 5 volts peak-to-peak (1.7V rms; +7 dBm). The DXPWin and DXP38.EXE terminal programs include tuning indicator bars which may be used to adjust the receiver output volume.

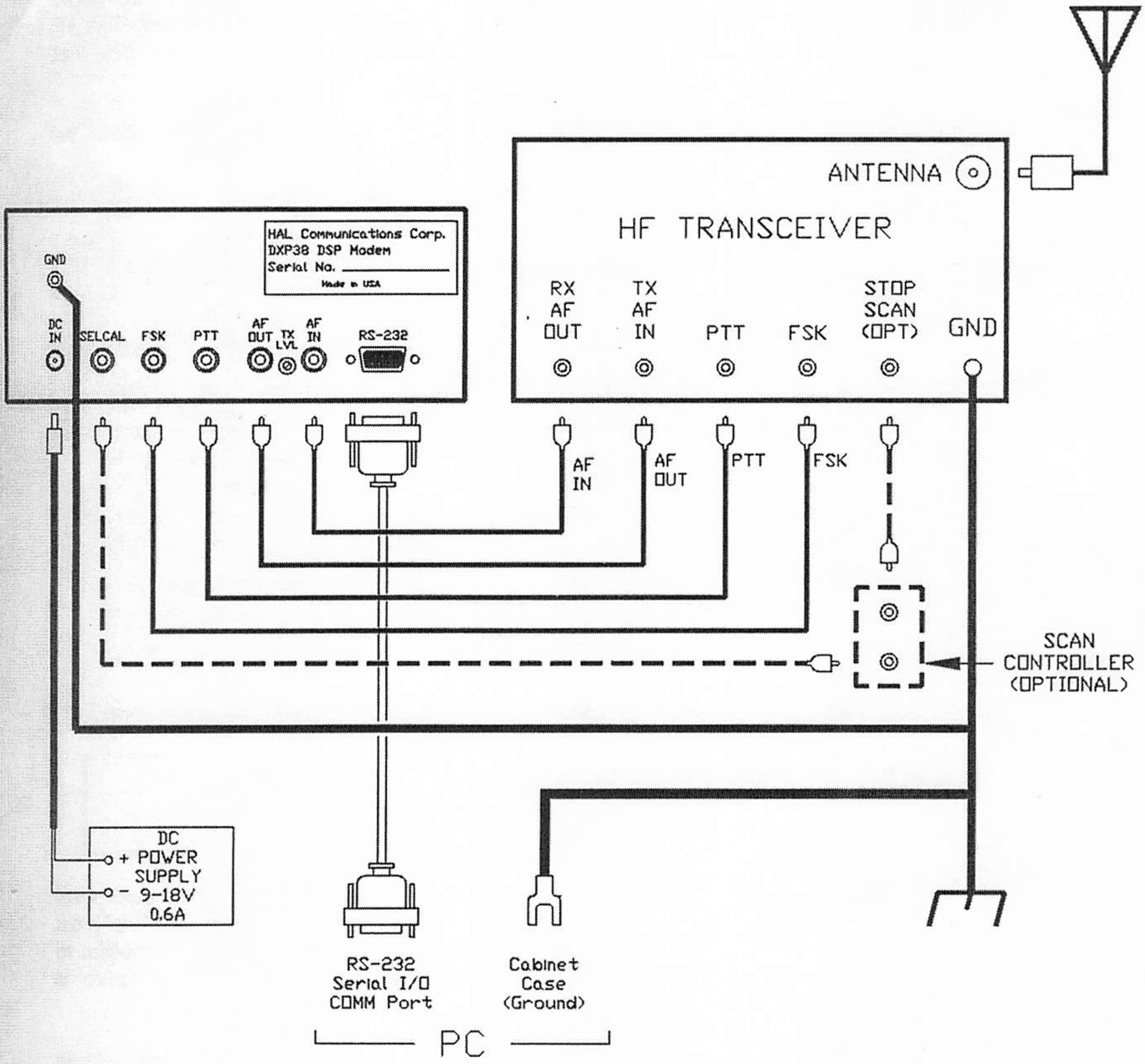
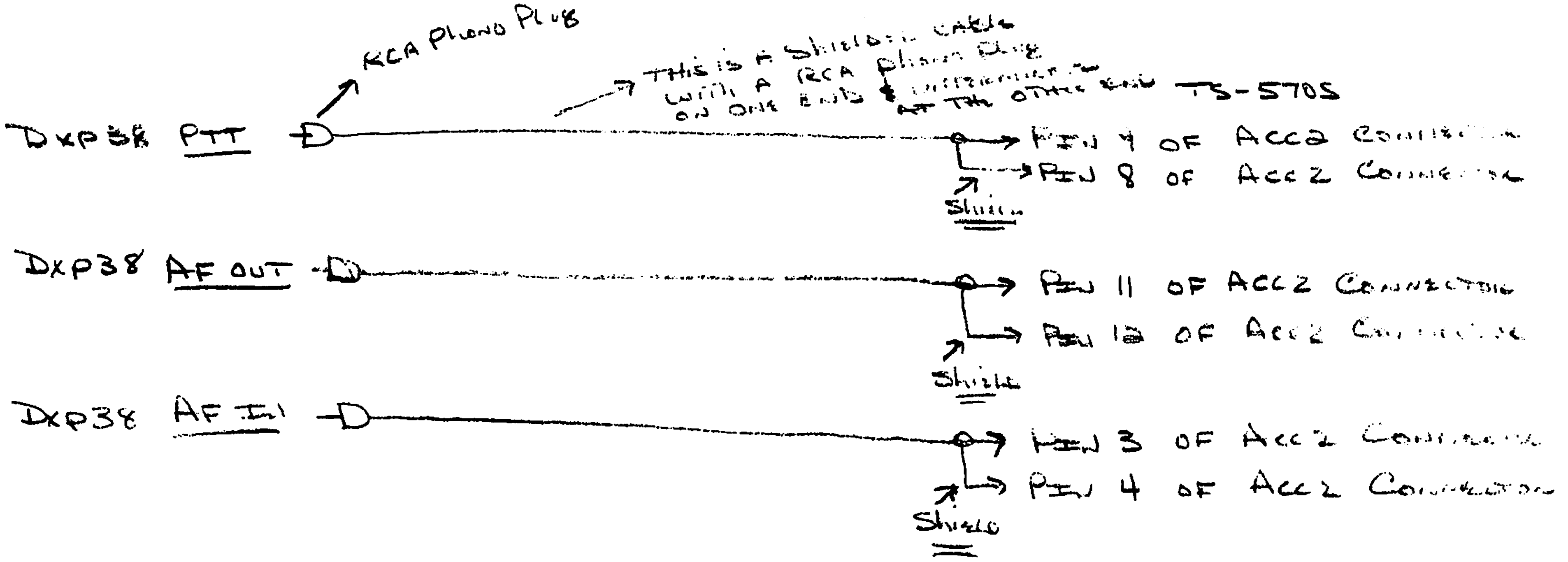


Figure 2.2 Radio System Connections



THE ABOVE CONNECTIONS ARE FOR ALL MODES OF THE DXP38 USING AFSK

IF YOU WANT TO USE THE FSK [illegible] THE [illegible] CABLE [illegible] ONLY, YOU MAY MAKE THE CONNECTION BELOW: